

## Repeater power supply - MACX PL-EX-RPSSI-2I - 2904959

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Ex i measuring transducer power supply and input signal conditioner, HART-transparent. Transfers supplied or active 0/4 - 20 mA electrically isolated signals from the Ex area to two loads in the safe area. 4-way electrical isolation, PLd, screw connection

### Product Features



### Key commercial data

|                      |          |
|----------------------|----------|
| Packing unit         | 1 pc     |
| Custom tariff number | 85437090 |
| Country of origin    | Germany  |

### Technical data

#### Note

|                         |                                                                           |
|-------------------------|---------------------------------------------------------------------------|
| Utilization restriction | EMC: class A product, see manufacturer's declaration in the download area |
|-------------------------|---------------------------------------------------------------------------|

#### Dimensions

|        |          |
|--------|----------|
| Width  | 12.5 mm  |
| Height | 99 mm    |
| Depth  | 114.5 mm |

#### Ambient conditions

|                                         |                                          |
|-----------------------------------------|------------------------------------------|
| Ambient temperature (operation)         | -20 °C ... 60 °C (Any mounting position) |
| Ambient temperature (storage/transport) | -40 °C ... 80 °C                         |
| Maximum altitude                        | ≤ 2000 m                                 |
| Permissible humidity (operation)        | 10 % ... 95 % (non-condensing)           |

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### Ambient conditions

|                      |                                                                                   |
|----------------------|-----------------------------------------------------------------------------------|
| Noise immunity       | EN 61000-6-2 When being exposed to interference, there may be minimal deviations. |
| Degree of protection | IP20                                                                              |

### Input data

|                            |                                 |
|----------------------------|---------------------------------|
| Signal input               | Repeater power supply operation |
| Current input signal       | 4 mA ... 20 mA                  |
| Transmitter supply voltage | > 16 V (20 mA)                  |
|                            | > 15.1 V (23 mA)                |
| Voltage drop               | approx. 3.9 V                   |
| Signal input               | Signal conditioner operation    |
| Current input signal       | 4 mA ... 20 mA                  |
| Voltage drop               | approx. 3.9 V                   |

### Output data

|                                          |                                                 |
|------------------------------------------|-------------------------------------------------|
| Signal output                            | Repeater power supply operation                 |
| Current output signal                    | 4 mA ... 20 mA (active)                         |
| Load/output load current output          | < 450 $\Omega$ (20 mA)                          |
|                                          | < 380 $\Omega$ (23 mA)                          |
| Output ripple                            | < 20 mV <sub>rms</sub>                          |
| Output behavior in the event of an error | 0 mA (Cable break in the input)                 |
|                                          | $\geq$ 23 mA (Cable short-circuit in the input) |
| Signal output                            | Signal conditioner operation                    |
| Current output signal                    | 4 mA ... 20 mA (active)                         |
| Load/output load current output          | < 450 $\Omega$ (20 mA)                          |
|                                          | < 380 $\Omega$ (23 mA)                          |
| Output ripple                            | < 20 mV <sub>rms</sub>                          |
| Output behavior in the event of an error | 0 mA (Cable break in the input)                 |
|                                          | 0 mA (Cable short-circuit in the input)         |

### Power supply

|                          |                                                 |
|--------------------------|-------------------------------------------------|
| Designation              | Repeater power supply operation                 |
| Supply voltage range     | 19.2 V DC ... 30 V DC (24 V DC (-20% ... +25%)) |
| Max. current consumption | < 75 mA (24 V DC / 20 mA)                       |
| Power consumption        | < 1.45 W (24 V DC / 20 mA)                      |

### Connection data

|                                       |                     |
|---------------------------------------|---------------------|
| Conductor cross section solid min.    | 0.2 mm <sup>2</sup> |
| Conductor cross section solid max.    | 2.5 mm <sup>2</sup> |
| Conductor cross section flexible min. | 0.2 mm <sup>2</sup> |

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### Connection data

|                                       |                     |
|---------------------------------------|---------------------|
| Conductor cross section flexible max. | 2.5 mm <sup>2</sup> |
| Conductor cross section AWG min.      | 24                  |
| Conductor cross section AWG max.      | 14                  |
| Stripping length                      | 7 mm                |
| Screw thread                          | M3                  |
| Connection method                     | Screw connection    |
| Tightening torque, min                | 0.5 Nm              |
| Tightening torque max                 | 0.6 Nm              |

### General

|                                         |                                                                                                                                   |
|-----------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------|
| Maximum transmission error              | < 0.1 % (of final value)                                                                                                          |
| Transmission error, typical             | < 0.05 % (of final value)                                                                                                         |
| Maximum temperature coefficient         | < 0.01 %/K                                                                                                                        |
| Step response (10-90%)                  | < 1.3 ms (for 4 mA ... 20 mA step)                                                                                                |
| Status display                          | Green LED (PWR supply voltage)                                                                                                    |
| Inflammability class according to UL 94 | V0                                                                                                                                |
| Electromagnetic compatibility           | Conformance with EMC Directive 2004/108/EC                                                                                        |
| Housing material                        | PA 66-FR                                                                                                                          |
| Color                                   | yellow                                                                                                                            |
| Designation                             | Input/output/power supply                                                                                                         |
| Electrical isolation                    | 300 V <sub>rms</sub> (Rated insulation voltage (surge voltage category II; pollution degree 2, safe isolation as per EN 61010-1)) |
|                                         | 2.5 kV (50 Hz, 1 min., test voltage)                                                                                              |
| Designation                             | Input/output                                                                                                                      |
| Electrical isolation                    | 375 V (Peak value in accordance with EN 60079-11)                                                                                 |
| Designation                             | Input/power supply                                                                                                                |
| Electrical isolation                    | 375 V (Peak value in accordance with EN 60079-11)                                                                                 |
| Designation                             | Output 1/output 2                                                                                                                 |
| Electrical isolation                    | 1.5 kV AC (50 Hz, 1 min., test voltage)                                                                                           |
| Conformance                             | CE-compliant, additionally EN 61326                                                                                               |
| ATEX                                    | # II (1) G [Ex ia Ga] IIC/IIB                                                                                                     |
|                                         | # II (1) D [Ex ia Da] IIIC                                                                                                        |
|                                         | # II 3 (1)G Ex nA [ia Ga] IIC/IIB T4 Gc                                                                                           |
| IECEX                                   | [Ex ia Ga] IIC/IIB                                                                                                                |
|                                         | [Ex ia Da]                                                                                                                        |
|                                         | Ex nA [ia Ga] IIC/IIB T4 Gc                                                                                                       |
| UL, USA / Canada                        | UL 61010                                                                                                                          |
|                                         | Class I Div 2; IS for Class I, II, III Div 1                                                                                      |

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## Technical data

### Data communication (bypass)

|                     |      |
|---------------------|------|
| HART function       | Yes  |
| Protocols supported | HART |

### Safety data

|                                      |                                 |
|--------------------------------------|---------------------------------|
| Operation                            | Repeater power supply operation |
| Max. output voltage $U_o$            | 25.2 V                          |
| Max. output current $I_o$            | 93 mA                           |
| Max. output power $P_o$              | 587 mW                          |
| Group                                | IIC                             |
| Max. external inductivity $L_o$      | 2 mH                            |
| Max. external capacity $C_o$         | 107 nF                          |
| Group                                | IIB                             |
| Max. external inductivity $L_o$      | 4 mH                            |
| Max. external capacity $C_o$         | 820 nF                          |
| Safety-related maximum voltage $U_m$ | 253 V AC (125 V DC)             |
| Operation                            | Signal conditioner operation    |
| Input voltage $U_i$                  | $\leq 30$ V                     |
| Input current $I_i$                  | $\leq 150$ mA                   |
| Max. internal inductance $L_i$       | negligible                      |
| Max. internal capacitance $C_i$      | negligible                      |

## Classifications

### eCl@ss

|            |          |
|------------|----------|
| eCl@ss 5.1 | 27210121 |
| eCl@ss 6.0 | 27200206 |
| eCl@ss 8.0 | 27210121 |

### ETIM

|          |          |
|----------|----------|
| ETIM 4.0 | EC002653 |
| ETIM 5.0 | EC002653 |

## Approvals

### Approvals

Approvals

UL Listed / cUL Listed / GL / cULus Listed

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### Approvals

Ex Approvals

IECEEx / ATEX / UL Listed / cUL Listed / cULus Listed

Approvals submitted

### Approval details

UL Listed



cUL Listed



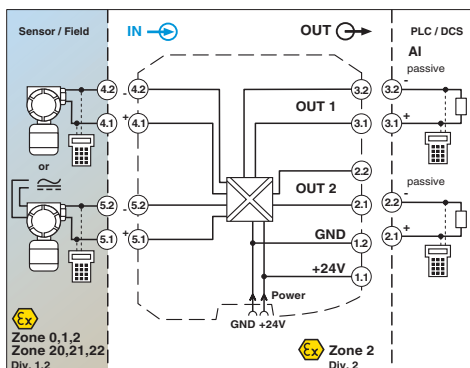
GL

cULus Listed



### Drawings

Block diagram



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